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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,084	11/28/2001	Masanori Konishi	3688ME-30	6101

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EXAMINER

HARPER, HOLLY R

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



# Office Action Summary

Application No.

09/997,084

Applicant(s)

KONISHI ET AL.

Examiner

Holly R. Harper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 23-30 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |



## DETAILED ACTION

### *Response to Amendment*

The Amendment, filed on 3/8/04, has been entered and acknowledged by the Examiner.

Claims 1-19, 22-24, and 26-30 have been amended.

Claims 20-21 have been canceled.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Suda et al. (US 6627144).

Regarding claim 1, the Suda reference discloses an infrared lamp (Column 4, Line 20) with a carbon-based heating element with at least one kind of metallic compound (Column 1, Lines 56-65), lead wires electrically connected to both ends of the carbon-based heating element (Column 4, Lines 15-18) and a quartz glass tube (Column 3, Line 14) filled with inert gas (Column 3, Lines 12-13).

The Examiner notes that the claim limitation of “firing a mixture of a carbon composition having compactibility and a carbon yield of substantially nonzero after firing” and “reheating



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said carbon-based heating element in a vacuum, to set the change rate of the electric specific resistance of said carbon-based heating element, at a high temperature in lit state with respect to electric specific resistance at a normal temperature in unlit state in the range of -20% to +20%” is drawn to a process of manufacturing, which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding claim 2, the Suda reference discloses that the metallic compound included in the carbon-based heating element is at least one of metallic carbide, metallic boride, metallic silicide, and metallic nitride (Column 1, Lines 56-65).

Regarding claim 3, the Suda reference discloses that the composition of the carbon-based heating element includes resins (Column 2, Lines 26-29).

Regarding claim 4, the Suda reference discloses that the composition of the carbon-based heating element includes a powder consisting of graphite, carbon black, or coke powder (Column 2, Lines 46-50).

3. Claims 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Toya et al. (USPN 6,515,264).

In regard to claim 23, the Toya reference discloses a lamp with a plurality of terminals on at least one wire-shaped heating element (Figure 1, Element A), a carbon-based heating element (Figure 1, Element 2), internal lead wires (Figure 1, Elements 11a,b) connected to the electrode terminals (Figure 1, Element A) and to intermediate terminal plates (Figure 1, Elements 15a,b).



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In regard to claim 24, the Toya reference discloses that the heating assembly (Figure 1, Element 2) is in a transparent glass tube (Figure 1, Element 3), the intermediate electrode terminals (Figure 1, Elements 15a,b) are sealed at sealing portions (Figure 1), and external lead wires (Figure 1, Elements 12a,b) extend outside the tube and are connected to the intermediate terminal plates (Figure 5).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (USPN 6,627,144) in view of Toya et al. (USPN 6,515,264).

Regarding claims 5 and 7, the Suda reference discloses an infrared lamp with a carbon-based heating element, but fails to clearly point out connection members. The Toya reference teaches that molybdenum or tungsten (Column 9, Lines 23-24) lead wires (Figure 1, Elements 12) are electrically connected to the current passing portions via connection members (Figure 1, Elements 11) having an inherent resistance smaller than that of the heating element and larger than the lead wire (Column 8, Lines 23-41, Column 9, Lines 25-30) in order to confine the main heat release to the heater element. Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use connection members having an inherent



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resistance smaller than that of the heating element and larger than the lead wire, as taught by Toya, in order to confine the main heat release to the heater element.

In regard to claim 9, the Suda reference discloses that the quartz glass tube is filled with argon (Column 3, Lines 13).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (USPN 6,627,144) in view of Toya et al. (USPN 6,515,264) and Higashiyama (JP 2000-306657).

In regard to claim 8, the Suda in view of Toya reference discloses an infrared lamp with a carbon-based heating element, but fails to clearly point out a coil spring portion. The Higashiyama reference teaches a coil spring portion (Figure 1, Element 6) having a diameter almost close to the inner diameter of the quartz glass tube provided on at least one of the lead wires connected to both ends of the element in order to absorb the size change due to expansion. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a coil spring portion, as taught by Higashiyama, to absorb the size change due to expansion.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (USPN 6,627,144).

In regard to claim 25, the Suda reference discloses a carbon-based heating element with at least one kind of metallic compound (Column 1, Lines 56-65), but does not specify that more carbon is contained the surface layer than in the inside of the heating element. However, it is noted that more carbon in the surface layer than the inside of the heating element is not shown to solve any problems or yield any unexpected results that are not within the scope of Suda's



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carbon-based heating element. Accordingly, more carbon in the surface layer than the inside of the heating element is considered to be an obvious matter of design choice.

8. Claims 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (USPN 6,627,144) in view of Kunikazu (JP 2001-150115).

In regard to claims 26-30, the Suda reference discloses a lamp with a carbon-based heating element, but does not disclose the many uses of this lamp. The Kunikazu reference teaches that lamps with a carbon-based heating element can be used for heating, cooking, and warming (English abstract). It is well known in the art that infrared lamps have many varied uses which would include those disclosed by Kunikazu and others such as for drying (which would imply heat was produced) and for medicinal purposes.

***Allowable Subject Matter***

9. Claims 10-19 are allowed.

Regarding claim 10, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 10, and specifically comprising the limitation of an infrared lamp with a plurality of carbon-based heating elements connected in series via a cylindrical connection terminal.

Regarding claims 11 and 18, claims 11 and 18 are allowable for the reasons given in claim 10 because of their dependency status from claim 10.

Regarding claim 12, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 12, and specifically comprising the limitation



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of an infrared lamp with a plurality of carbon-based heating elements inserted into electrode terminals with a recessed portion at both ends of each heating element.

Regarding claims 13-17, claims 13-17 are allowable for the reasons given in claim 12 because of their dependency status from claim 12.

Regarding claim 19, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 19, and specifically comprising the limitation of an infrared lamp with the cross-sectional shape of the plate-shaped heating element being rectangular with the ratio of thickness to the width of the rectangle being 1:5 or more and the direction of the longer side of one of the plurality of elements is different from those of the other elements.

10. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 6, and specifically comprising the limitation that the connection members are cylindrical members composed of a carbon-based substance and having a slit at one end of the cylindrical member.



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***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Harper whose telephone number is (571) 272-2453. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Holly Harper  
Patent Examiner  
Art Unit 2879



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